

Work Order ID 59906

Wednesday, June 16, 2010 1:01:07 PM

Page 1

Item ID: D350-748-101

Accept

Setup Start

Revision ID:

Item Name: Crosstube Installation, High Fwd

Stop

Start Date: 6/16/2010 Start Qty: 1.00

Required Date: 7/8/2010 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date: 10-6-16

Tooling:

Date:

Run Start




QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D350-748-141	Rev E								
100		0.00							
	DOCUMENT CONTROL								
DC	Memo	0.00							
Document Control	Photocopy bluefile & type labels per PPPD350-748-101		CHG001						
110		0.00							
	BENDING MACHINE - CROSSTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT 22								
120		0.00							
	QC15- Crosstube Dimensional Check								
QC	Memo	0.00							
Quality Control									

Surf
u

PTB →

DP

10-8-5

Solo/12

FE

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-748-101 PAR #: N/A Fault Category: Closest to NCR: (Yes) No DQA: 10 Date: 10.10.28
 Resolution: Rework Disposition: Rework QA: N/C Closed: 10/10/28 Date: 10/10/28

NCR: <u>59906</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>10.08.12</u>	<u>125</u>	<u>Tube bent high.</u> <u>re.: Process</u>	<u>CP</u> <u>10.08.12</u> <u>AS 042</u>	<u>Remove $\approx 0.125"$ FROM</u> <u>CUFF</u>	<u>MB</u> <u>10-09-16</u>	<u>CP</u> <u>10.08.16</u> <u>AS 042</u>	<u>CP</u> <u>10.08.12</u> <u>AS 042</u>	<u>S</u> <u>10/06/12</u>

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Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Crosstubes	0.00							
	Memo	0.00							
	1-Drill Tube as per Dwg D350-748-141 Using DT8876 A,B & C Drill Jigs. Set-up drill table as per QSI 010								
	2-Deburr								
	3-Engrave Part # and Batch # as per Dwg D350-748-141								
	4-Remove all marks from tube within limits of D350-748-141								
	5- Apply a light coat of LPS3 on the interior of tube Batch: <u>109956</u>								
140	QC5- Inspect part completeness to step on W/O	0.00							
	Memo	0.00							
	CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)								

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

Outsource process-Cadplate per QSI017 4.1.9.1

0.00



Outsource3

Memo

0.00

Outsource process - Cad plate

Issue P/O:

12422

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possibe Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

CZ 10/8/18 ①

160

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure certificate of conformity is attached

Pc 6/2/12 C

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

PTO

Dart Aerospace Ltd

W/O: 59906		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
10/9/14	175	NDT per OSI 038 before + after load testing per eng. this one time only P/O: 12507	CZ	10/9/14	①	W 10.9.14	
		Rec'd + inspect	C	10/9/14	①		

Part No: D350-748-101 PAR #: CAE 10-23 Fault Category: Closestube NCR: Yes No DQA: 1A Date: 10.10.28
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: 1A Date: 10/10/28

NCR: 59906		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10.09.24	180	After 175 ↑, pit marks were found while priming the tube. Employee was advised by QA to stop & notify engineering. RC: Process	W 10.10.26	Scrap (Eng use only)	B 10.10.26	W 10.10.26	W 10.10.26	S 10/10/16

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Cust Item ID:

Required Date: 7/8/2010 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside crosstube as per QSI 005 4.2
2-Prime Outside of Tube as per Dart QSI 005 4.2

P70
Previous
Page

190

0.00



QC14- Inspect Spray Paint

QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

200

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Install Ground wire Insert, then insert screw and washer
2-Install Abrasion strips as per Dwg D350-748-141 & QSI 035.
3-Install supports Using Dt8876 as per Dwg D350-748-141, Torque to 60-80 IN-LBS

W/O:		WORK ORDER CHANGES					
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Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

220

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

230

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Required Date: 7/8/2010 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	Packaging	0.00							
	Packaging								
	Packaging								
	Memo	0.00							
	Identify and pack for shipping as per PPP D350-748-101								
	Location: _____								
	PPP Rev: _____								
250	QC21- Final Inspection - Work Order Release	0.00							
	QC	0.00							
	Quality Control								

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item: D350-748-101

Parent Item Name: Crosstube Installation, High Fwd



Start Date: 6/16/2010

Required Date: 7/8/2010



Start Qty: 1.00

Required Qty: 1.00



Comments: IPP Rev:A New Issue 06-07-05 JLM
IPP Rev:B Update qty of MS21042L5 06-09-12 KJ
IPP Rev:C Rev B 07-11-15 DD
IPP Rev:D Combined manufacturing 08.04.02 EC verified by: DD
IPP Rev:E 08-06-24 revD as per dwg DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D350-748-141TRN		Manufactured	No			110	Each	5.0000	1	1			
													
Crosstube Turning Detail													

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG		
B59332	① ⁵	DP
55295	1	10-8-5
55297	1	
55298	1	
55299	1	
55300	1	

ALS4-1032-225	Purchased	No	200	Each	6,529.000	1	1
							
Insert							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
PK011	6529	
110768	6529	

AN960JD10	NAS1149D0363J	Purchased	No	200	Each	0.0000	1	1
								
Washer								

W/O:		WORK ORDER CHANGES					
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Picklist Print

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Work Order ID: 59906



Parent Item: D350-748-101



Parent Item Name: Crosstube Installation, High Fwd

Start Date: 6/16/2010

Required Date: 7/8/2010

Start Qty: 1.00

Required Qty: 1.00

D2856-400 Manufactured No 200 f 238.2388 1.181 1.243158



Abraison Strip



Location	Loc Qty	Loc Code
----------	---------	----------

ST403	238.2388	
50593	43.4568	
56626	194.782	

D3500-1 Manufactured No 200 Each 32.0000 4 4



Saddle



Location	Loc Qty	Loc Code
----------	---------	----------

ST425	32	
52326	6	
55605	26	

D3502-1 Manufactured No 200 Each 64.0000 2 2



Support



Location	Loc Qty	Loc Code
----------	---------	----------

ST066	64	
47120	1	
50287	38	
52903	25	

MS21920-20 Purchased No 200 Each 101.0000 2 2



Clamp (per MIL-DTL-8783C)



Location	Loc Qty	Loc Code
----------	---------	----------

LG	101	
112624	24	
112793	3	
114687	50	
114779	24	

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W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID: 59906

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Parent Item Name: Crosstube Installation, High Fwd

Start Date: 6/16/2010

Required Date: 7/8/2010

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-10

Purchased

No

200

Each

137.0000

1

1



Screw

Location

Loc Qty

Loc Code

ST291

137

112794

37

112940

100

AN4-41A

Purchased

No

220

Each

226.0000

8

8



Bolt

Location

Loc Qty

Loc Code

ST360

1

226

111424

26

113359

100

114941

100

AN4-6A

Purchased

No

220

Each

1,121.000

16

16



Bolt

Location

Loc Qty

Loc Code

ST356

1121

112933

96

113149

522

114523

2

114615

1

114941

500

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Work Order ID: 59906

Parent Item: D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 6/16/2010

Required Date: 7/8/2010

Start Qty: 1.00

Required Qty: 1.00

AN5-32A Purchased No 220 Each 178.0000 4 4



Bolt



Location	Loc Qty	Loc Code
ST340	178	
113121	28	
114056	100	
114405	50	

AN960JD416 NAS1149D0463J Purchased No 220 Each 18.0000 32 32



Washer



Location	Loc Qty	Loc Code
ST357	18	
107939	18	

AN960JD516 NAS1149D0563J Purchased No 220 Each 0.0000 8 8



Washer



D3501-1 Manufactured No 220 Each 478.0000 16 16



Bushing



Location	Loc Qty	Loc Code
ST066	478	
45402	15	
45918	159	
48268	204	
53779	100	

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Parent Item Name: Crosstube Installation, High Fwd

Start Date: 6/16/2010

Required Date: 7/8/2010

Start Qty: 1.00

Required Qty: 1.00

MS21042L4

Purchased

No

220

Each

3,188.000

24

24



Nut

Location

Loc Qty

Loc Code

ST139

2

111827

2

ST300

3186

113422

68

114523

110

114718

1000

114784

2000

9063

8

MS21042L5

Purchased

No

220

Each

695.0000

4

4



Nut

Location

Loc Qty

Loc Code

ST139

500

114813

500

ST300

195

114449

195

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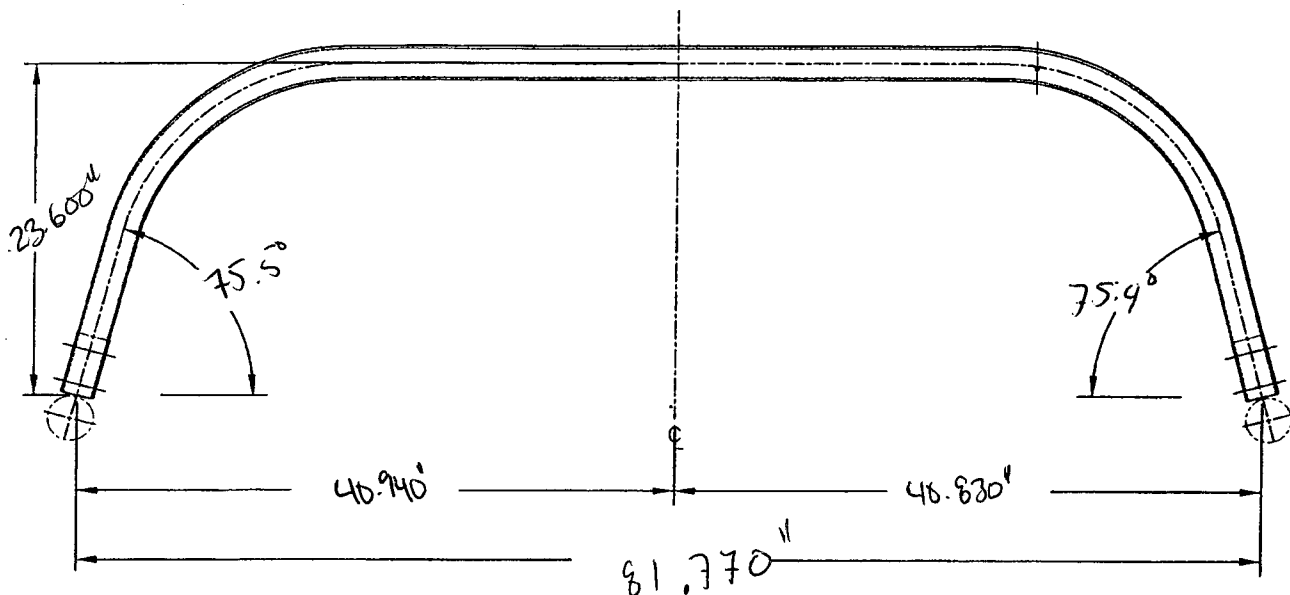
NOTE: Date & initial all entries

125
-13
112

25
13
38

DART AEROSPACE LTD	Work Order:	59906
Description: Crosstube High Fwd (AS350/355)	Part Number:	D350-748-101
Inspection Dwg: D350-748-141	Rev: D	Rev E
		Page 1 of 1

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Comments
twist = .035"
Cut 1/8" FROM CUFF
10/08/12

QC15 Inspection	S
Date	10/08/12

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	

W/O:		WORK ORDER CHANGES					
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Item	Qty -141	Part Number	Description
1	X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6017-115	CROSSTUBE
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6017-115
FINISHED LENGTH = 110.270±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D350-748-141" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 59906
PL 10/1/16

RELEASED
R 2009-10-29
JMB

E	REVISE GENERAL NOTES; UPDATE TO CURRENT ADD STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3); TOLERANCES (ZN C6-3, D1-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6017-115 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	RF	D350-748-141	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

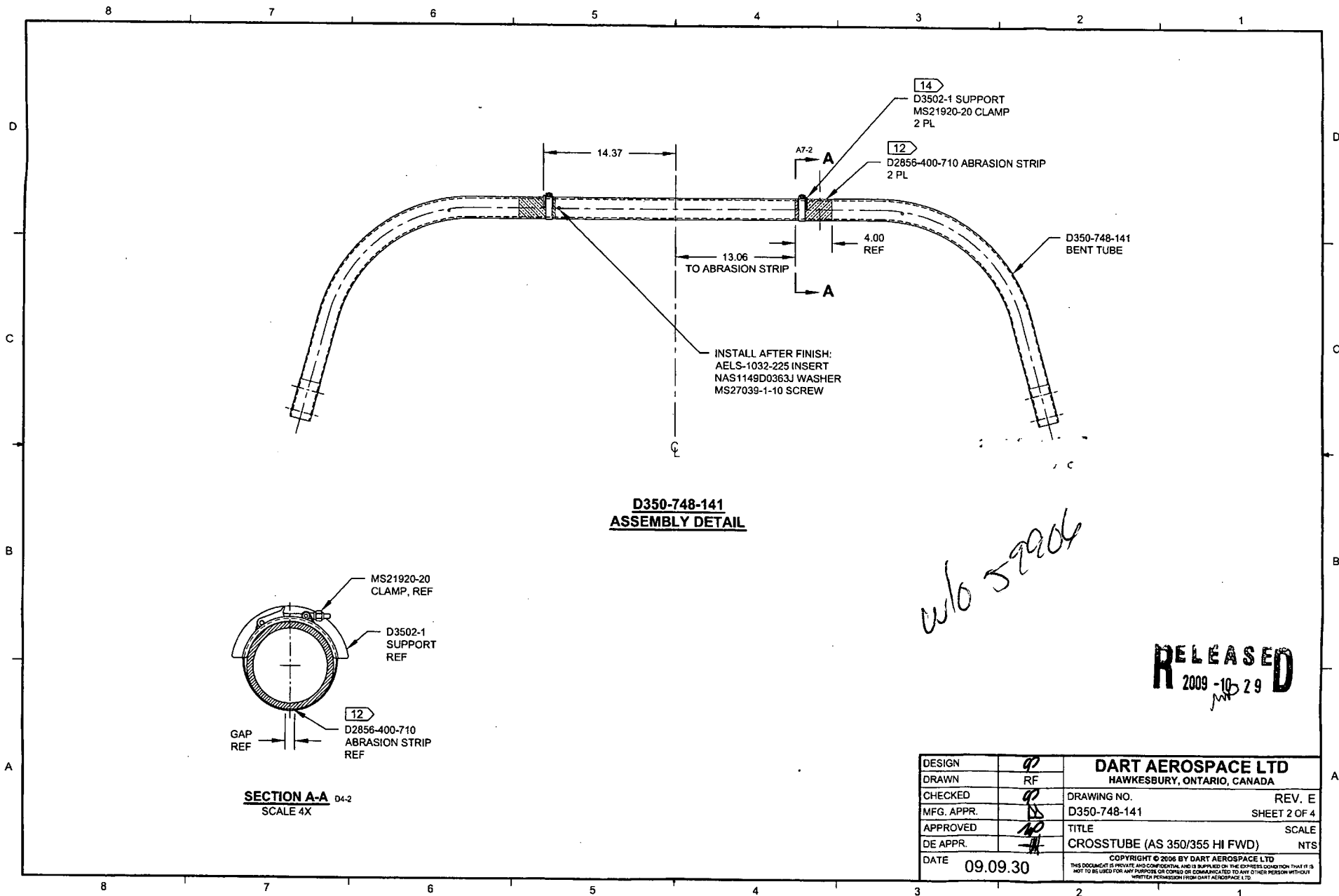
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



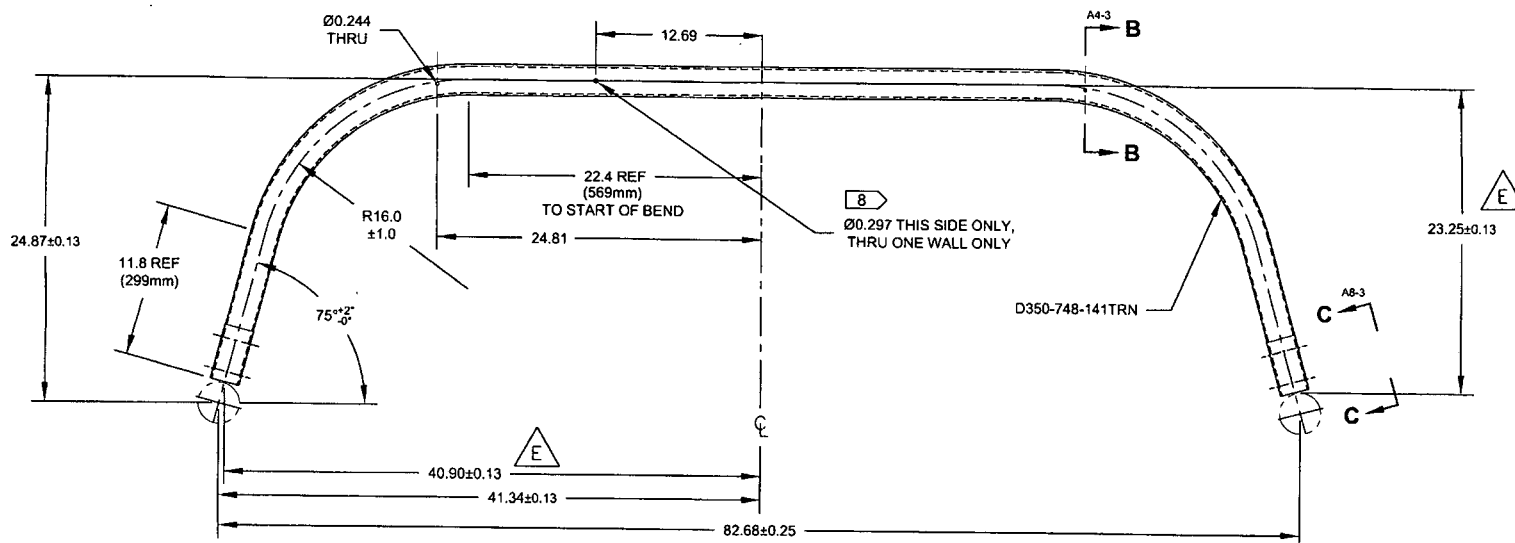
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

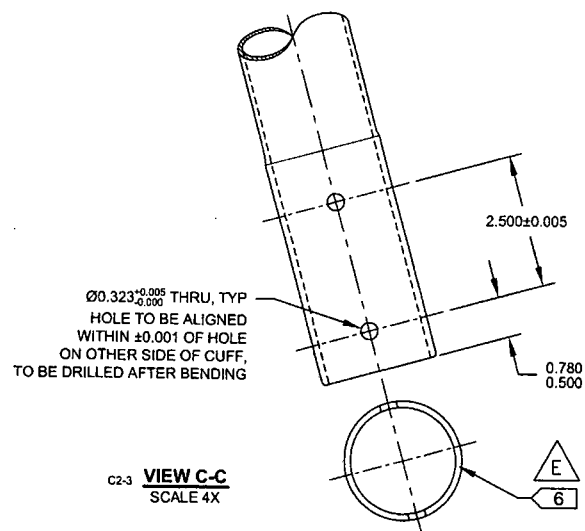
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

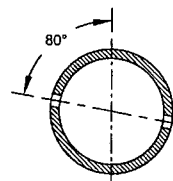
NOTE: Date & initial all entries



D350-748-141
BENDING AND DRILLING DETAIL 10



C2-3 **VIEW C-C**
SCALE 4X



SECTION B-B D3-3
SCALE 4X

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. E
MFG. APPR.	9	D350-748-141	SHEET 3 OF 4
APPROVED	10	TITLE	SCALE
DE APPR.	10	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

u/o 52904

RELEASED
2009-10-29

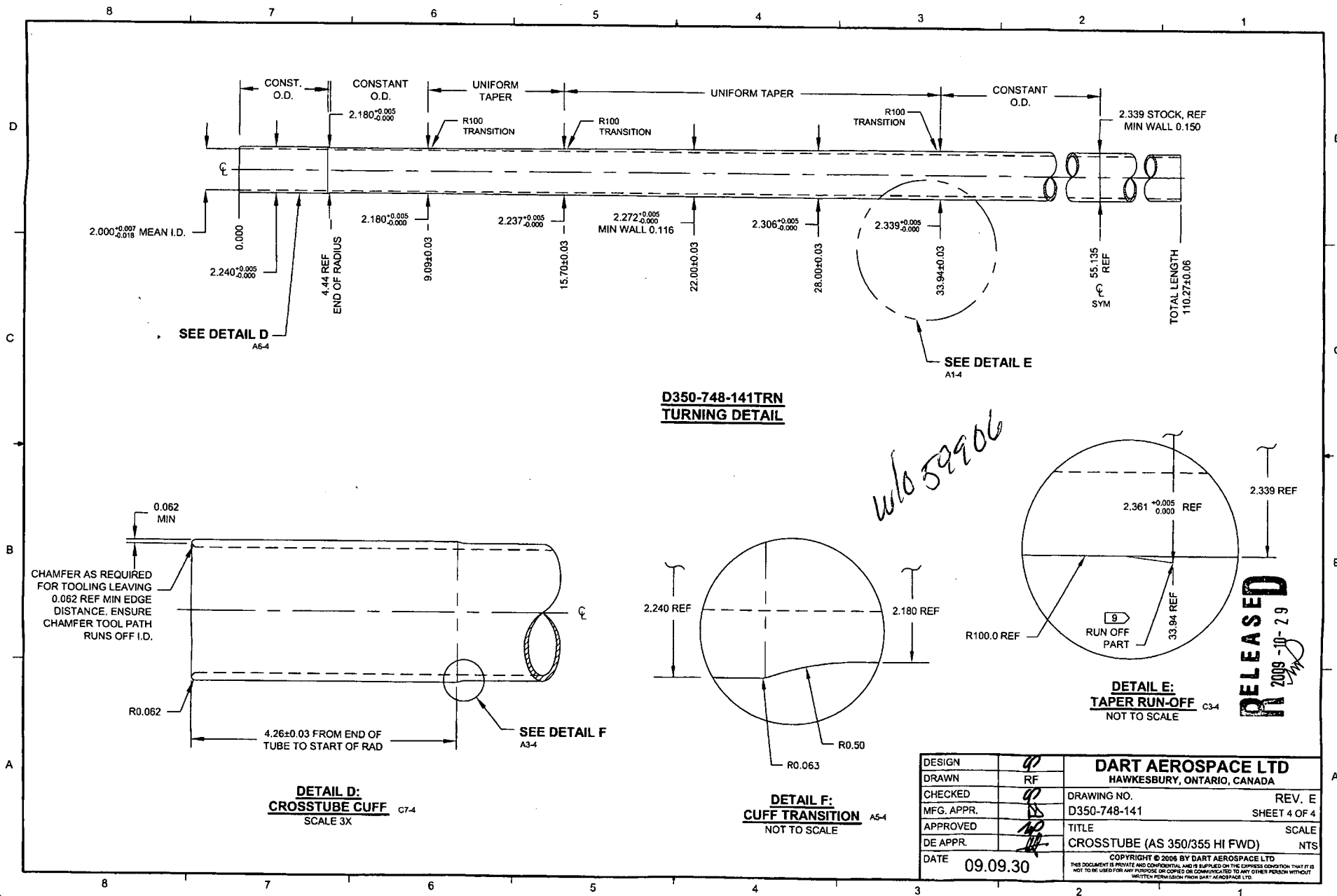
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Aug-31-2010

**CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St
Hawksbury, ON K6A 1K7**

**W/O #: 97910
INVOICE #: 51056**

**CONTRACT OR
PURCHASE ORDER # PO12422**

DESCRIPTION: SKID

QTY 1

P/N # d350-748-101

S/N # B59906

**STRESS RELIEF BAKE @ 375 DEG. HEAT CHART #10-920. MPI IAW
ASTM-E-1444. CADMIUM PLATED IAW AMS-QQ-P-416C, TYPE 2
YELLOW, CLASS 2. BAKE HEAT CHART #10-916.**

**CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.**

Approved Inspector:



A large, stylized handwritten signature in black ink, written over a horizontal line.



LIQUID PENETRANT TEST REPORT

P- 15189

CLIENT DAVE AGROSPACE DATE SEPT 13-2010 PAGE 1 OF 1
ATTENTION LINDA/CHANTEL ACUREN JOB No. 100-10-0838
ADDRESS 1270 ABELEEN STREET. PO/VO No. HAWKESBURY PLANT
HAWKESBURY ON WORK LOCATION HAWKESBURY PLANT
KOH 1KT ACCEPTANCE STD. ASTM 1417 REV./DATE 2007
PROJECT F.P.I. on CROSS TUBES
ITEM(S) EXAMINED 11

JOB DESCRIPTION PROCEDURE No. LT-0002 REV./DATE — TECHNIQUE No. LT-0002 REV./DATE —
PART No. — MATERIAL STEEL THICKNESS —
SCOPE WET FLOUORESCENT LIQUID PENETRANT
INSPECTION CARRIED OUT 100% EXTERNAL.

TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MAGNAFLUX BLACK LIGHT S/N 16459 ☐ OUTPUT > 1000 μ W/CM² ☐ AMBIENT < 2 fc
PENETRANT 2-L-67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LAB. NO.
DEVELOPER SKD-52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N 1098966 CAL DUE DATE 06-7-10
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- (☐ METRIC ☐ IMPERIAL)

1 - CROSS TUBE, W.O. 59805 ✓
1 - CROSS TUBE, W.O. 60815 ✓
1 - CROSS TUBE, W.O. 59907 ✓
1 - CROSS TUBE, W.O. 60816 ✓
1 - CROSS TUBE, W.O. 59905 ✓
1 - CROSS TUBE, W.O. 60820 ✓
1 - CROSS TUBE, W.O. 60821 ✓
1 - CROSS TUBE, W.O. 60822 ✓
1 - CROSS TUBE, W.O. 60817 ✓
1 - CROSS TUBE, W.O. 60818 ✓
1 - CROSS TUBE, W.O. 59904 ✓
1 - CROSS TUBE, W.O. 59906 ✓

- EXAMINATION WAS
COMPLETED
PRIOR TO DEFLECTION
TESTING

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE Don Tiffley DTR # EG3387
TECHNICIAN (SIGNATURE): Mike Jett SIGNATURE
NAME (PRINT): Mike Jett REPORT REVIEWED BY:
1ST TECHNICIAN 2ND TECHNICIAN
CGSB LEVEL II SNT LEVEL _____ CGSB LEVEL _____ SNT LEVEL _____
CGSB REG. No 6606 CGSB REG. No _____



LIQUID PENETRANT TEST REPORT

P- 15191

CLIENT	<u>DART Aerospace</u>	DATE	<u>SEP 13-2010</u>	PAGE	<u>1</u> OF <u>1</u>
ATTENTION	<u>LINDA/CHANTEL</u>	ACUREN JOB NO.	<u>188-10-0838</u>	TIME	AM <input checked="" type="checkbox"/> PM <input type="checkbox"/>
ADDRESS	<u>1270 ABERDEEN STREET</u> <u>HAWKESBURY, ON.</u> <u>K6H 1K7</u>	PO/VO NO.	<u>-</u>	WORK LOCATION	<u>HAWKESBURY PLANT</u>
PROJECT	<u>F.P.I.</u>	ACCEPTANCE STD.	<u>ASME 1417</u>	REV./DATE	<u>2007</u>
ITEM(S) EXAMINED	<u>ON</u> <u>12</u>	<u>CROSS TUBES</u>			

JOB DESCRIPTION	PROCEDURE NO. <u>LT-0002</u> REV./DATE <u>-</u>	TECHNIQUE NO. <u>LT-1417</u> REV./DATE <u>-</u>
PART NO.	<u>-</u>	MATERIAL <u>STEEL</u> THICKNESS <u>-</u>
SCOPE	<u>WET FLOUORESCENT LIQUID PENETRANT</u> <u>INSPECTION CARRIED OUT 100% EXTERNAL</u>	

TEST DETAILS	
METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNAFLUX</u>	BLACK LIGHT S/N <u>16459</u> <input type="checkbox"/> OUTPUT > 1000 μ W/cm ² <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>2L07</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H20</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABINO</u>
DEVELOPER <u>5KD/52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N <u>1098866</u> CAL DUE DATE <u>OCT 19 2010</u>
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	

TEST SURFACE	
SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input checked="" type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input checked="" type="checkbox"/> CLEAN BARE METAL	
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F	

RESULTS- (<input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL)																																		
<table border="1"><tr><td>1</td><td>-CROSSTUBE W.O. 59905</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 60815</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 59907</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 60816</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 60820</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 60821</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 60822</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 60817</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 60818</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 59904</td><td>✓</td></tr><tr><td>1</td><td>-CROSSTUBE W.O. 59906</td><td>✓</td></tr></table>	1	-CROSSTUBE W.O. 59905	✓	1	-CROSSTUBE W.O. 60815	✓	1	-CROSSTUBE W.O. 59907	✓	1	-CROSSTUBE W.O. 60816	✓	1	-CROSSTUBE W.O. 60820	✓	1	-CROSSTUBE W.O. 60821	✓	1	-CROSSTUBE W.O. 60822	✓	1	-CROSSTUBE W.O. 60817	✓	1	-CROSSTUBE W.O. 60818	✓	1	-CROSSTUBE W.O. 59904	✓	1	-CROSSTUBE W.O. 59906	✓	<p>- EXAMINATION WAS COMPLETED</p> <p>* AFTER DEFLECTION</p> <p><u>TESTING</u></p>
1	-CROSSTUBE W.O. 59905	✓																																
1	-CROSSTUBE W.O. 60815	✓																																
1	-CROSSTUBE W.O. 59907	✓																																
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SIGNATURES		DTR # <u>E6 3387</u>
CLIENT REPRESENTATIVE <u>Jan. & Jan. Tiller</u>	TECHNICIAN (SIGNATURE): <u>Mike Johnston</u>	REPORT REVIEWED BY:
NAME (PRINT): <u>Jan. & Jan. Tiller</u>	NAME (PRINT): <u>Mike Johnston</u>	NAME INITIALS
CGSB LEVEL <u>II</u> SNT LEVEL <u>II</u>	CGSB LEVEL <u>II</u> SNT LEVEL <u>II</u>	
CGSB REG. NO. <u>6606</u>	CGSB REG. NO. <u>6606</u>	